

THE ENCHANTED BUILDING

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IN THE Iguazu National Park, Argentina, above the famous falls, a dirt road runs alongside the Rio Iguazu, and in a small clearing in the forest between them is a most remarkable building. It consists of an elevated room set upon square-sectioned concrete pillars, and is connected by a concrete overhead pathway to a large, solid, square concrete block which forms a platform to house some machinery; one wall of the block backs onto the river. The building was constructed about 1983, and I came across it on 19 October 1994; the sight that met my glance that day was unbelievable. Much of the platform wall facing the building and the underside of the elevated pathway were covered with butterflies quietly feeding, presumably upon salts emanating from the cement; there was very little evidence of algal growth except in several areas, where in fact butterflies were sparse or absent. Well over 90% comprised only two species of large, grey *Hamadryas* settled with wings widespread – *H. februa* Hb. and *H. epinome* Feld. It would have been very difficult to insert a finger to touch the cement without making contact with a butterfly. Lesser numbers were settled on the concrete pillars and the underside of the elevated room, congregations being noted especially at the heads of the columns where there were also small clusters of nests of solitary wasps.

At the road margins in the vicinity were puddles and damp patches from rain, and there was also a small damp gutter beside a short drive close to one side of the building. The species feeding on the cement structure were to some extent different from those at roadside damp patches, and those at the damp gutter were different again. Two days of rain prevented my visiting the area again in 1994, and when I returned in October 1995 the building presented a very different picture. On arriving at Puerto Iguazu it became immediately apparent that butterflies were scarce, both around the hotel on the edge of the town and in the nearby forest, so I was not surprised to find only a few feeding at the cement walls of the building, nor did matters improve over the ensuing two weeks. However, on reflection, I realise that the main difference was the absence of the *Hamadryas* species in numbers; in fact quite a variety of other species were present in ones and twos.

Damp patches beside the road attracted characteristic, but small, assemblies of *Papilionidae* and *Pieridae*, in particular the common large yellow and orange *Coliadinae*, along with some Nymphalids – small *Ortilia* species, and quite a variety of bright medium-sized insects of such genera as *Doxocopa*, *Adelpha*, *Eunica* and *Pyrrhogyra*, plus the occasional Hesperiid or Riodinid, and the occasional Ithomiid-like Nymphalid *Eresia lansdorfi* Godt. This list also describes very well the composition of the small

assembly always present in the damp gutter beside the building, except that it was never seen to be visited by any *Papilionidae* or *Pieridae*, despite their presence only a few yards away at the roadside. Presumably water dripping from the building during rain carried dissolved salts from the cement to sufficiently alter the composition of the water which might remain to dampen the soil or gutter below. Elsewhere beside the building the ground is covered by low vegetation.

Of other species, besides the *Hamadryas* at the cement walls, only two were more frequent than to be noted in more than ones or twos, and these were the Nymphalid *Diaethria clymena* Cram. and the whitish Hesperiid *Mylon menippe* Hew., both of which are commonly seen beside roadside puddles. In 1994 several large Nymphalids, *Victorina stelenes* L., *Siproeta trayja* Hb. and *Smyrna blomfeldi* Fab. and two rather smaller *Memphis* species, *M. ryphea* Cram. and a black and blue one, probably *M. morvus* Fab., both with a wide distribution from Mexico to Argentina, were present.

A feature of roadside damp patches, at least in October, on the basalt plateau of northern Misiones is the frequent predominance of Nymphalids and absence of Pierids and Papilionids, or only a token representation of them. Feeding at the concrete of the building and at the damp gutter beside it was a considerable variety of medium-sized and small Nymphalids, many as singletons. They included several *Adelpha* species, *A. mincia* Hall commonly, and *A. iris* Drury, *A. goyama* Schaus and *A. calliphane* Fruh. rarely, *Pyrrhogyra amphiro* Bates, *Doxocopa linda* Feld., *D. agathina* Cram., *D. seraphina* Hb. and *D. zunilda* Godt. The small species included *Dynamine tithia* Hbn., *D. mylitta* Cram., *Diaethria candrena* Godt., *Paulogramma pyracmon* Godt., *Callicore eucale* Fruh. and *C. hydaspes* Drury, and also the small blue Riodinid *Lasseia agesilas* Latr. Three species of small brown Nymphalid were invariably present in small numbers, and were also attracted to the flowers of a tall ragwort (*Senecio* sp.), five to six feet in height, which grew beside the road; these were *Ortilia dicoma* Hew., *O. vellica* Hew. and *O. orthia* Hew.

On 14 October 1995, what I thought was a large brown Nymphalid was later identified as the Brassolid *Opsiphanes invirae* Hb. a species with a range from Honduras to Argentina. The specimen was observed feeding at one of the concrete pillars soon after noon in bright sunlight. Whether it was disturbed initially from the adjoining forest, or whether it came to feed spontaneously, there is no way of knowing. It made several short sorties, and twice settled on nearby foliage. The flight time of Brassolids is dusk and dawn, and DeVries (1987) emphasises this regarding this genus, and of *O. invirae* states that he has only taken it in baited traps high in the forest canopy in Costa Rica.

A surprising feature was the absence of Satyrids feeding at damp roadside patches and the building, especially as several *Euptychia* species were common in the forests at that time; one *Morpho* species which frequently

flew along the road, and Lycaenids which were scarce, were not observed at the building.

Two particular aspects of this phenomenon make it worthy of report and study. Firstly it is most unusual, if not unique, to witness so vast an assembly of butterflies at a cement structure; not far away were other concrete buildings, but no butterflies in attendance. Secondly, why this particular composition of species and absence of *Pieridae* and *Papilionidae*?

Scoble (1975) states that despite many observations, basic questions about butterflies feeding are still unknown, including precisely what substances are sought and what substances stimulate feeding. He suggests that from most substrates upon which they feed they derive a number of substances, and that different species probably have different requirements, and therefore the various species at damp sand may in fact be seeking different nutrients.

Many of the species attracted to the concrete are more often associated with rotting fruit or animal excreta, nevertheless, the vast majority also feed at the roadside puddles. Arms *et al.* (1974) using controlled experiments with feral *Papilio glaucus* L. found that anions such as phosphate, chloride and nitrate as such did not attract butterflies, and that visits were confined almost entirely to salts containing sodium ions. The main salt found at the surface of the concrete is calcium carbonate, but salts migrating to the surface also include sulphates of calcium, sodium and potassium. Therefore it appears that the food sought at this building and the damp gutter beside it was sodium ions derived from sodium sulphate, for extraneous contaminants such as bird or animal excreta, or solutions from rotting fruit, were certainly absent, and there were no overhanging trees. A further relevant observation in 1994 was the placing of a piece of black nylon fabric on the ground within the clearing, and in shade; within a few minutes it was covered with a score of *Hamadryas* intently feeding and reluctant to move on my approach. The material had been handled, and in the hot, humid conditions would have become contaminated with perspiration, ie sodium chloride solution.

It is most unfortunate that this building is within the bounds of the Iguazu National Park, for two intriguing questions must be left unanswered. Do Brassolids and other crepuscular species visit it at dusk and dawn, and is it an attraction to nocturnal moths?

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References

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